

ON TRACHYPHLOEOSOMA AND A NEW SPECIES FROM HAWAII

(Coleoptera: Curculionidae)

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The discovery in Hawaii of a new species of broad-nosed weevil belonging to the genus *Trachyphloeosoma*, apparently a recent accidental importation, has led to a survey of the genus, and the results of my study are presented herewith.

Subfamily OTIORHYNCHINAE

Tribe TRACHYPHLOEINI

No members of this tribe have heretofore been recorded from Polynesia, but a number of species are found in Australia and New Zealand, and together with Eurasia, Africa and North America, there are about 250 species known in some 17 genera. By far the largest number of species is found in the Mediterranean area. Evidently none occur in South America. The group as a whole is poorly known and inadequately treated in literature. It is an assemblage of ground dwellers. Lacordaire, 1863:191, characterized the tribe as a section of the Otiiorhynchinae whose members have the antennae at most moderate, most often short and stout, the club oval. Scutellum absent or very small. Elytra not broader than the prothorax at the base, not angulate at the humeri. Corbels of the hind tibiae open; tarsal claws free. Second abdominal segment longer than each of the two following segments, separated from the first by an angulate suture; intercoxal projection broad, truncate in front. Apterous.

Genus *Trachyphloeosoma* Wollaston

Trachyphloeosoma Wollaston, 1869:414; 1877:170. Marshall, 1916:275, redescription.

Trachyphloeops Roelofs, 1873:165. Synonymy by Sharp, 1896:92.

The known species of this genus are as follows:

advena Zimmerman.

Hawaii.

alternatum Marshall.

Trachyphloeosoma alternatum Marshall, 1916:176, figure 85.

India.

setosum Wollaston. Type of the genus.

Trachyphloeosoma setosum Wollaston, 1869:415.

Trachyphloeops setosa Roelofs, 1873:166, pl. 2, figure 6. Type of *Trachyphloeops*.

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Trachyphloeosoma roelofsi Sharp, 1896:92 (new name for *setosa* Roelofs). **New synonym.**

Japan; St. Helena.

I have compared the Wollaston series of *setosum* from St. Helena with the Sharp material of *roelofsi* from Japan and find the two series to represent only one species, and the new synonymy is necessary. Such discontinuity in distribution indicates that the species has been artificially spread by commerce. Wollaston found it in great abundance on St. Helena, and it is probable that it has been introduced there. From the evidence now available, it is not possible to say whether it is a Japanese insect or whether it has also been introduced to Japan.

KEY TO THE KNOWN SPECIES OF TRACHYPHLOEOSOMA

1. Alternate elytral intervals more elevated than the even numbered ones, thus giving the elytra a moderately ribbed appearance; length about 4 mm., excluding head; Nilgiri Hills, Madras, India **alternatum** Marshall.
Elytral intervals not alternately elevated; length, excluding head, about 2.5 mm. or less; not from India 2
2. Only elytral intervals one, three, five and seven with complete rows of well developed, erect, spatulate setae, the other intervals with at most only a few much smaller setae; first segment of antennal funicle compressed and (excluding basal stalk) sub-circular in outline when viewed from broadest side; St. Helena and Japan **setosum** Wollaston.
Elytral intervals one to eight each bristling with a row of erect, narrowly spatulate setae, the setae equally developed on all these intervals; first funicular segment of normal shape and not subcircular; Hawaii **advena** Zimmerman.

Trachyphloeosoma advena Zimmerman, new species (figures 1, 2).

Derm reddish brown to piceous; covered with a yellowish brown, earth-like incrustation which conceals most of the surface; scales and setae mostly yellowish; the scales appear to be "mealy" or "furry."

Head with dorsal sculpturing continuous with that of the dorsum of the rostrum, coarsely and roughly sculptured, with a rather broad median channel from top of head to base of epistome, the coarse sculpturing and most of the median channel normally concealed by the incrustation; with two longitudinal rows of conspicuous, long, erect, curved, subspatulate setae on each side of median line from epistome to above hind margins of eyes and a single, curved row across crown; epistome with a half-moon shaped, oblique, median, apical area marked off by a vague raised line, longitudinal dorsal contour of epistome thus conspicuously angulate as seen from side, epistome with several long, narrow setae; mandibles each with several long, narrow setae; side of rostrum with long, narrow setae in the bare area at base of mandible, but with some subspatulate setae in the incrustated area beneath the scrobe; eye four facets broad, not quite as long as distance between hind margin and prothorax, only a little longer than subapical thickness of antennal scape; mentum one-tenth broader than long, broadly sub-diamond shaped, but hexagonal, with four long setae set in a transverse row behind middle.

Antennae with scape reaching anterior margin of pronotum, slightly arcuate, gradually thickened to apex, squamose and incrustated, with numerous, long, erect, nar-

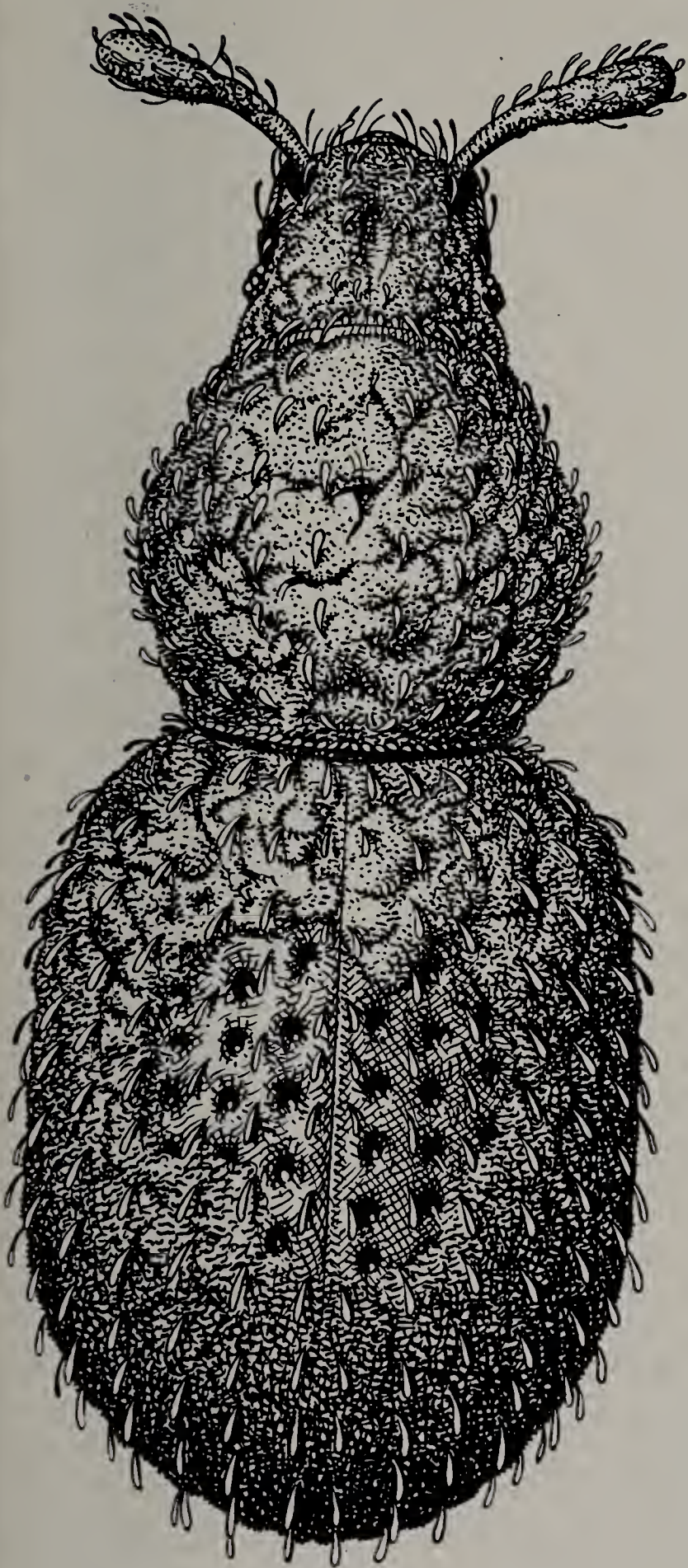


FIG. 2.—*Trachyphloeosoma advena* Zimmerman. Sketch of side view of head and antenna.

FIG. 1.—*Trachyphloeosoma advena* Zimmerman; length, excluding head, 2 mm. Incrustation removed from part of elytra to reveal sculpture.

rowly subspatulate setae, longer than the seven funicular segments combined; funiculus, viewed from beneath, with the entire length of segment one including its subvoid apical part (the part seen from above) and its basal stalk (concealed from above by scape) subequal in length to segments two, three and four combined, its greatest breadth subequal to length of segment two; segment two about one-fourth longer than broad, subequal in length to segments three and four combined; segments three to seven successively slightly broader; club ovoid, about as long as funicular segments three to seven inclusive.

Pronotum a little broader than long, broadest near middle; coarsely punctate granulate (this structure to be seen only when surface is denuded of scales and incrustation), appearing somewhat like the surface of a blackberry, the derm shiny where cleaned; with numerous, erect, curved, narrowly subspatulate setae, each arising from the top of a granule.

Elytra, as illustrated, a little more than twice as long as pronotum, measured from side; intervals from one to eight (the others usually abraded by actions of legs) each with a row of numerous, conspicuous, long, erect, arcuate, subspatulate setae; intervals flat or gently convex, not elevated; striae only slightly impressed between the punctures which are large and nearly as broad as the intervals (as seen when properly cleaned) and the separations of some of them subequal to their diameters.

Legs with femora and tibiae with numerous, erect, curved, narrowly subspatulate setae; hind femora reaching to base of ventrite five.

Sternum with the prosternum of equal length before and behind the coxae, these areas each with a row of large punctures, and with setae which are shorter than those on dorsum; intercoxal process of mesosternum bluntly tuberculiform, protuberant, squamose; metasternum coarsely punctured, with curved, subspatulate setae, the process between the mesocoxae about one-half as wide as the diameter of an eye, distance between mid and hind coxae at narrowest point one-half greatest diameter of a metacoxa.

Venter with first and second ventrites with large punctures and curved, narrowly subspatulate setae, the segments fused but the arcuate suture between them deep and broad; ventrite one only a little longer than two along median line, the intercoxal process sinuously truncate, as broad as the greatest diameter of a metocoxa; ventrite two as long as three, four and five together along median line, declivitous behind; ventrites three and four narrow, subcariniform, together distinctly shorter than ventrite five, each with a single row of widely spaced, erect, curved setae; ventrite five coarsely punctured and with a number of slender, curved, erect setae, a little less than twice as broad as long.

Length (excluding head) : 2.0-2.4 mm.; breadth : 1.0-1.2 mm.

Hawaiian Islands: Mt. Tantalus, Oahu. Holotype female, to be deposited in Bishop Museum, Honolulu and 19 female paratypes, collected from litter on the ground beneath an *Acacia koa* tree between March and December, 1954, by F. A. Bianchi. Paratypes will be deposited in the British Museum, United States National Museum and in Honolulu. Mr. Bianchi used a modified "Berlese funnel" to collect the specimens.

The fact that all of the specimens collected are females leads to the presumption that the species may be parthenogenetic. One example has the ovipositor fully extruded, and it is longer than the elytra.

I have been unable to distinguish a "mandibular scar" on this species, and this is an unusual feature.

The salient features which distinguish this little weevil from its known congeners are summarized in the key. It does not appear closely allied to either of the other described species, but it is most like *setosum*. There is no other weevil in the Hawaiian Islands which might be confused with this species.

This new member of the Hawaiian fauna has been found in the most intensively collected lower forest area in the Islands—Mt. Tantalus which rises directly above the city of Honolulu. Several years ago I did considerable sifting of forest floor litter in this area, but I did not find the species. It is probable that a more detailed survey in other areas of Honolulu will reveal the insect in other places. At this time it is not possible to tell whence the species has come. It may have been introduced from a western Pacific island or from Asia or the Orient during or after the recent world war. (Since this manuscript was written, I have examined, in the Museum National D'Histoire Naturelle in Paris, two examples from Tam Dao, Tonkin, collected by H. Perrot and in the Hustache collection, which appear to be a form of *advena*.)

The larvae of this species will probably be found to feed on the underground parts of plants, while the adults are defoliators, and it is possible that it may become of some economic importance.

The specimens were sent to me for study by Mr. F. A. Bianchi, Experiment Station, Hawaiian Sugar Planters' Experiment Station, Honolulu. The drawings except the antenna, are the work of Mr. Arthur Smith, British Museum (Natural History).

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